

REMARKS/ARGUMENTS

Claim 9

The Examiner rejected claim 9 under 35 USC 112, second paragraph. Claim 9 is amended by this response to make it dependent on claim 10, which should solve the antecedent issue raised by the Examiner.

Claims 1-6 and 8-11

The Examiner rejected claims 1-6 and 8-11 on prior art grounds on pages 3 - 10 of the Official Action.

Claim 1 is amended to recite:

adjusting frequency detuning of said slave laser with respect to said master optical oscillator thereby adjusting the phase thereof relative to other slave lasers in said plurality of slave lasers”.

In order to do this claim 1 was reorganized by the addition of a whereby clause. The underlined language is new to claim 1 and would serve to differentiate claim 1 from the prior art assuming that the Examiner’s rejection of these claims was proper. Support can be found in the discussions in paragraphs [0039] and [0040] of the present patent application.

However, it is believed that the prior art rejection of claim 1 and its dependent claims is not proper.

In citing the publication of Chance in combination with the patent to DeLoach, the Examiner is trying to find an example of prior art in which the phase of a laser diode, which is combined with other laser diodes in a beam-combined array, is adjusted by bias current or voltage applied to that laser diode (see page 4 of office action). However, the Examiner erroneously asserts in that the signal from the computer controller, 34 of Figure 1 in Chance, is used to adjust the phase of the laser. Note that in paragraph [0082] of Chance,

Chance describes using the computer to control the phasing of the PMT detectors and not the bias signals to the lasers. Instead, Chance (in paragraph [0094] of his patent application) states that “delay lines which produce variable transmitter delays can be used to obtain appropriate phasing for steering the beam across the tissue.” This is the same method for changing the phase that is used by DeLoach. So the rejection is not proper.

Nevertheless, the Applicant believes that the Examiner should be able to find examples of prior art¹ in which the relative phases of laser diodes, although they are not also injection locked to a master laser, are adjusted by controlling their drive current or voltage. Thus, Claim 1 is amended herein to avoid such art. An important and unique to the present disclosure is the use of this adjustment to vary the “free running frequency” and thereby the “frequency detuning” of the slave laser. It is the combination of adjusting the detuning and being injection locked to a common master laser (master optical oscillator) that produces the desired variations in the phases of the multiple slave lasers to allow beam steering or wavefront coherence to occur.

Since claim 6 was cancelled by the last response, it should no longer be marked as being rejected.

Claims 7 and 22

The Examiner rejected claim 7 on prior art grounds on page 3 of the Official Action. Claim 22 is marked as being rejected on the summary page, but no grounds for rejecting claim 22 can be found in the official action.

These claims are either directly or indirectly dependent on allowed claim 21. Since dependent claims include the limitations of the claim(s) from which they depend, the rejection of claim 7 is improper as is any hypothetical rejection of claim 22.

¹ See the IDS mailed on April 11, 2007.

Claims 14 - 18 and 20

The Examiner rejected claims 14-18 and 20 on prior art grounds on pages 3 - 10 of the Official Action.

Claim 14 is amended to recite:

individually phase controlling the slave lasers of the plurality of slave lasers by adjusting a current or voltage applied to each of the slave lasers in the plurality of slave lasers to (i) thereby frequency detune each slave laser with respect to said master laser and (ii) thereby adjust the phase of each slave laser relative to other slave lasers in said plurality of slave lasers in order to steer the optical beam.

It is believed that this language serves to both differentiate Claim 14 from the art cited by the Examiner as well as the hypothetical art mentioned above. Since this amendment of claim 14 includes the subject matter of claim 18, claim 18 is cancelled without prejudice by this response.

Claims 15, 19, 21, 24 and 25

The Examiner allowed claims 15, 19, 21, 24 and 25. While the Examiner i thanked for this indication of allowability, at least claims 7 and 22 should have been included in this listing by reason of their dependence on claim 21.

Claim 23

On the summary sheet claim 23 is marked as being rejected. But no grounds for rejecting this claim can be found in the official action. That is, of course, improper. But given claim 23's dependence on claim 1 is it assumed that this claim will be allowed in response to this amendment.

Claim 26

Claim 26 was added by the last response, but it is neither allowed nor rejected in the official action. That is, of course, improper. Claim 26 is amended herein to depend from claim 19 instead of claim 18 since the subject matter of claim 18 has been moved into claim 14 by this response. Given claim 26's dependence on claim 19 is it assumed that this claim will be allowed in response to this amendment.

Summary

The Examiner is thanked for the thoroughness of the official action and for the detailed analysis which was provided. And while the Applicant does not agree with all of the assertions made by the Examiner, the Applicant appreciates the fact that the Examiner understands this technology well. With the entry of this amendment it is hoped that the Examiner will allow all of the pending claims. Of course, reconsideration is respectfully requested.

The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, then the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136 (a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

Response to Official Action

Dated 31 January 2007

Re: USSN 10/630,189

Page 13

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Mary Ngo

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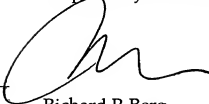
Mary Ngo

(Signature)

April 12, 2007

(Date)

Respectfully submitted,



Richard P. Berg

Attorney for the Applicant

Reg. No. 28,145

LADAS & PARRY

5670 Wilshire Boulevard,

Suite 2100

Los Angeles, California 90036

(323) 934-2300 voice

(323) 934-0202 facsimile